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(71)Applicant : WAKO PURE CHEM IND LTD

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(72)Inventor : KAKIZAWA MASAHICO

ICHIKAWA OSAMU

HAYASHIDA KAZUYOSHI

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(54) CLEANING AGENT

(57)Abstract:

PROBLEM TO BE SOLVED: To remove metallic impurities from the surface of a semiconductor substrate without corroding metal wiring and without detriment to the flatness of the surface by cleaning it with a cleaning agent prepd. by adding a complexing agent capable of forming a complex compd. with a metal-staining substance to an org. carboxylic acid.

SOLUTION: The org. acid has at least one carboxyl group, pref. 1-3 carboxyl groups, and may have 1-3 hydroxyl groups and/or 1-3 amino groups, a dicarboxylic or hydrocarboxylic acid being esp. pref. EDTA is an example of a complexing agent capable of forming a complex compd. with a substance which stains Al or Fe; however, a phosphonic acid compd. (e.g. 1-hydroxyethylidene-1,1'-diphosphonic acid) is an esp. pref. complexing agent. The amts. of the org. acid and the complexing agent compounded are 0.05-50wt.% and 0.01-10wt.%, respectively. Though the cleaning agent exhibits cleaning effects even at normal temp., it is heated to a suitable temp. when used since fine particles are removed more efficiently at higher temps. The cleaning agent can be compounded with many auxiliary ingredients.

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